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EXAMINER
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HARRISON, CHANTE E

ART UNIT	PAPER NUMBER
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2628

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 09/224,696  
Filing Date: January 04, 1999  
Appellant(s): CROTTY ET AL.

**MAILED**

**NOV 21 2006**

**Technology Center 2600**

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Kevin R. Casey

For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed May 25, 2005 appealing from the Office action mailed February 23, 2005.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

**NEW GROUND(S) OF REJECTION**

The following new grounds of rejection include dependent claims 4, 8, 12 and 16 into the previous 35 USC 112 rejection from which the claims were omitted.

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1, 2, 4, 5, 6, 8, 9, 10, 12, 13, 14 and 16-20 are rejected under 35

U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

The claim(s) contains subject matter which was not described in the specification in

such a way as to reasonably convey to one skilled in the relevant art that the

inventor(s), at the time the application was filed, had possession of the claimed

invention. Independent claims 1, 2, 5, 6, 9, 10, 13 and 14 include a "mathematical

matrix" and dependent claims 17-20 include a "mathematical model", neither of which

are supported by the Applicants specification. The Examiner's position regarding the

claim references to a "mathematical matrix" is provided below in the Response to

Arguments. With regard to the claim references to a "mathematical model", the

Applicants specification (pp. 2, ll. 27-30) supports that physical systems may be

modeled using many numerical methods, such as reordering and substitution, and

structural characteristics of the system being modeled.

The appellant's statement of the grounds of rejection to be reviewed on appeal is

substantially correct. The changes are as follows: the rejections of claims 3, 7, 11 and

15 are withdrawn because these claims are cancelled.

#### **(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

#### **(8) Evidence Relied Upon**

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Dooling, Daria, Technical Declaration, June 11, 2002

Dooling, Daria, Technical Declaration, April 30, 2003

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1, 2, 4, 5, 6, 8, 9, 10, 12, 13, 14 and 16-20 are rejected under 35

U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Independent claims 1, 2, 5, 6, 9, 10, 13 and 14 include a "mathematical matrix" and dependent claims 17-20 include a "mathematical model", neither of which are supported by the Applicants specification. The Examiner's position regarding the claim references to a "mathematical matrix" is provided below in the Response to Arguments. With regard to the claim references to a "mathematical model", the

Applicants specification (pp. 2, ll. 27-30) supports that physical systems may be modeled using many numerical methods, such as reordering and substitution, and structural characteristics of the system being modeled.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 5-7, 9-11 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schwuttke et al., U.S. Patent 6,222,547, 4/2001, 345/440.

As per independent claim 1, Schwuttke discloses generating a grid based on a plurality of data values (col. 6-7, ll. 63-5), associating each data value with a geometric shape according to a predetermined set of rules (col. 6, ll. 29-34; col. 7, ll. 10-27), placing the shapes on the grid (col. 7, ll. 20-24) and displaying visual and geometric information placed on the grid in graphical form (FIGS. 4-7).

Schwuttke fails to specifically disclose extracting a plurality of data values associated with a mathematical matrix.

It would have been obvious to one of ordinary skill in the art to incorporate extracting a plurality of data values associated with a mathematical matrix with the disclosure of Schwuttke. One of skill in the art would have been motivated to incorporate extracting a plurality of data values associated with a mathematical matrix

with the disclosure of Schwuttke because Schwuttke discloses extracting telemetry data that includes data relative to a type of subsystem, e.g. electrical, (col. 7, ll. 15-18, 23-26), and may include a tracking of battery voltages (e.g. voltage is the mathematical product of a one by one matrix involving resistance and current) (col. 9, ll. 10-16) determined as a result of numerical operations associated with a mathematical matrix.

As per independent claim 2, Schwuttke discloses identifying a plurality of numerical attributes associated with each data value (FIG. 2; col. 6, ll. 8-29; col. 7, ll. 3-5, 11-18) and associating each numerical attribute with a visual attribute (col. 7, ll. 3-5, 11-18). The rejection as applied to claim 1 is included herein.

As per independent claims 5 and 9, Schwuttke discloses a computer usable medium having code for implementing the method of claim 1 (col. 5, ll. 37-45). Thus the rejection as applied to claim 1 is included herein.

As per independent claims 6 and 10, Schwuttke discloses a computer usable medium having code for implementing the method of claim 2 (col. 5, ll. 37-45). Thus the rejection as applied to claim 2 is included herein.

As per independent claim 13, Schwuttke discloses a storage device having instructions for implementing the method of claim 1 (col. 5, ll. 37-45). Thus the rejection as applied to claim 1 is included herein.

As per independent claims 14, Schwuttke discloses a storage device having instructions for implementing the method of claim 2 (col. 5, ll. 37-45). Thus the rejection as applied to claim 2 is included herein.

As per dependent claims 17-20, Schwuttke discloses the data arrays of the plurality of data values are the data arrays of mathematical models of systems (i.e. the data arrays represent data values acquired from a simulation of the disclosed system; where the simulation includes data, e.g. battery voltages, obtained from associated mathematical matrices) (Fig. 7).



**(10) Response to Argument**

***a) The Specification Lacks Support for the claim phrase “mathematical matrix”***

The claim phrase “mathematical matrix” is rejected as new matter due to insufficient support in the specification. Additionally, Appellant argues that the term is either disclosed expressly or inherently, but does not mention the phrase “mathematical matrix” in the specification. Appellant presently argues (Brief: pp. 9, Para 1) that the phrase “mathematical matrix” is represented in the specification as both a dense array and an algebraic array. However, because the Appellant in previous arguments to an office action, indicated that the “matrix” as disclosed in the prior art and interpreted by the Office based on the dictionary definition of an array did not correspond to a “mathematical matrix” as claimed due to the absence of numerical operations a new matter issue resulted. Appellant’s failure to explicitly define the phrase “mathematical matrix”, introduces new matter.

***b) The Schwuttke et al. patent anticipates the pending claims***

Appellant admits (Brief: pp. 11, Para 2) Schwuttke et al. discloses the display of data in the form of graphic symbols, where the data is representative of “telemetry data” (i.e. transmitted measured quantities of data). Appellant acknowledges that the matrix data of the present application can be reasonably substituted for the dictionary definition of the word “matrix” (Brief: pp. 10, Para 1). Schwuttke discloses objects representing data parameters, where the objects are relative to a type of subsystem (i.e. electrical) (col. 7, ll. 15-18, 23-26). Schwuttke further discloses objects represent telemetry data

(col. 7, ll. 55-60), where the telemetry data may include a tracking of battery voltages (e.g. voltage is the mathematical product of a one by one matrix involving resistance and current) (col. 9, ll. 10-16). As admitted by Applicant's specification (pp. 13, ll. 8-12), voltage is a function of resistance and current and is determined by numerical operations via a mathematical matrix. Therefore, Schwuttke discloses an array of data values associated with a mathematical matrix because he teaches recording data values associated with voltages, which are determined as a result of numerical operations, extracts the recorded data values (i.e. telemetry data), represents the recorded data values as objects (i.e. geometrical objects) (Fig. 5A) and displays the geometrical objects (Fig. 6).

Appellant identifies the disclosure of Schwuttke et al. as a completely different field of invention from the current application. However, the present application fails to claim a method and apparatus for **solving** mathematical equations expressed in the form of a mathematical matrix. In contrast the application presently claims representing and displaying data associated with a mathematical matrix as graphic objects, which Schwuttke also teaches.

Appellant further identifies Schwuttke et al. as failing to teach extracting data from a mathematical matrix. Schwuttke et al. teach associating telemetry data (i.e. transmitted numerical data derived from matrix operations: e.g. voltage) with a graphic object based on the type, quality and other attributes of data (col. 7, ll. 10-16), as does

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the Appellant's specification, which discloses associating graphic objects with numerical data based on attributes of the numerical data (Specification: pp. 7, Para 2).

Appellant argues that the Office identified the "mathematical matrix" limitation as distinguishing over the cited reference. Based upon Appellant's subsequent arguments to previous Office Actions rejecting the limitation, the limitation was previously identified as a distinguishing element over the prior art. However, upon further examination of the Application and the cited reference, it was concluded that the "mathematical matrix" limitation did not distinguish over the prior art; and the previous rejection in view of the cited art was subsequently maintained. Additionally, the subsequent after final amendment that incorporated the limitation in the independent claims was **not** entered; and the subsequent Final Office Action addressed all claims, inclusive of those claims lacking the limitation. Therefore, the Examiner asserts that substantive patentability does not hinge on the "new matter" objection; and Schwuttke anticipates the claims.

***c) The Schwuttke et al. patent fails to render obvious the subject matter recited in the pending claims.***

#### **(11) Related Proceeding(s) Appendix**

For the above reasons, it is believed that the rejections should be sustained.

This examiner's answer contains a new ground of rejection set forth in section (9) above. Accordingly, appellant must within **TWO MONTHS** from the date of this answer exercise one of the following two options to avoid *sua sponte dismissal of the appeal* as to the claims subject to the new ground of rejection:

(1) **Reopen prosecution.** Request that prosecution be reopened before the primary examiner by filing a reply under 37 CFR 1.111 with or without amendment, affidavit or other evidence. Any amendment, affidavit or other evidence must be relevant to the new grounds of rejection. A request that complies with 37 CFR 41.39(b)(1) will be entered and considered. Any request that prosecution be reopened will be treated as a request to withdraw the appeal.

(2) **Maintain appeal.** Request that the appeal be maintained by filing a reply brief as set forth in 37 CFR 41.41. Such a reply brief must address each new ground of rejection as set forth in 37 CFR 41.37(c)(1)(vii) and should be in compliance with the other requirements of 37 CFR 41.37(c). If a reply brief filed pursuant to 37 CFR 41.39(b)(2) is accompanied by any amendment, affidavit or other evidence, it shall be treated as a request that prosecution be reopened before the primary examiner under 37 CFR 41.39(b)(1).

Extensions of time under 37 CFR 1.136(a) are not applicable to the TWO MONTH time period set forth above. See 37 CFR 1.136(b) for extensions of time to reply for patent applications and 37 CFR 1.550(c) for extensions of time to reply for ex parte reexamination proceedings.

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Respectfully submitted,

Chante Harrison   
Examiner  
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**A Technology Center Director or designee must personally approve the  
new ground(s) of rejection set forth in section (9) above by signing below:**

Andrew Christensen 

*Acting Director*  
*TK 2600*

Conferees:

Mike Razavi 

Kee Tung 

KEE M. TUNG  
SUPERVISORY PATENT EXAMINER